NHDOT Roundabouts

Presented to

NH Chapter

Institute of Transportation Engineers

September 27, 2011
Agenda

- Current NH roundabouts
- Future roundabouts
- Observations
- Design standards
- Challenges
- Marketing
Roundabout Locations

- 22 in service
  - 6 State
  - 13 Municipal
  - 3 private
  - 17 single-lane
  - 5 multi-lane
  - 2 multi-lane under const. (MBRA Access Road)

NHITE Roundabouts
Keene
NH 101 / Winchester St

NHITE Roundabouts
Meredith
US 3 / NH 106

NHITE Roundabouts
Plymouth
US 3 / NH 175A

NHITE Roundabouts
Rye
NH 1A / Elwyn Road.

NHITE Roundabouts
Peterborough
NH 101 / Shaw’s

NHITE Roundabouts
Boscawen
US 4 / Harris Hill Rd

NHITE Roundabouts
Future Roundabouts

- 3 State roundabouts under const. in 2012
  - Pelham: Town Center (2)

- 22 under design or being considered
  - Lee Traffic Circle
  - Swanzey: NH 12 / Lake Street
  - Newington-Dover project (2)
  - Meredith (7)
Observations

- Good traffic operations
- No safety problems...
- Public acceptance
  - Study stage – urge police / fire to discuss with colleagues
  - Once roundabout is approved, publicity and education are vital
  - Upon opening, outspoken opposition from vocal minority is common
Design Standards

• No DOT policy on roundabouts

• Design guidelines
  – Traffic analysis: SIDRA, Synchro, NCHRP 672 spreadsheet, RODEL
  – Design: NCHRP 672 – *Informational Guide v.2*
Design Standards (cont.)

- **Key concepts**
  - Left offset of approach – maximize entry deflection
  - Fastest path analysis
  - Path overlap

- **Design vehicle**
  - WB 62 on State roads
  - WB 67 where allowed
    - Add exterior truck aprons where needed
    - Make exterior curb forgiving => chamfer, rounded
Challenges

• Construction traffic control
  – Difficult, but not insurmountable
    • Construction of truck apron and curbing
    • Curb reveal while running on binder

• Trucks
  – Accommodate trucks, but control speeds
  – Provide forgiving design details
Challenges (cont.)

• Pavement markings
  – Need durable markings

• PROWAG
  – New standards published for public comment
  – Accessible signals required for multi-lane ped crossings

• Pedestrian Hybrid Beacons
Marketing Challenges

- Public Education

NHITE Roundabouts
Marketing Challenges (cont.)

“Whoever was involved with the design and approval of that rotary should be fired on the spot. It will not solve the problems that it was designed to solve. Total waste of taxpayer money.”

Meredith Roundabout - June 14, 2007
www.winnipesaukee.com

“Another convert!! As a Parade Road resident life has become so much easier with the new roundabout. Yes, people who don't understand it will continue to gripe about it not being wide enough etc. and, yes, folks do need to use their turn signals but, all in all it really works just fine, even for trucks and cars with boats. Good job to the DOT and my sympathies if they read this site, at least early on.”

Meredith Roundabout - July 10, 2007
www.winnipesaukee.com
Marketing Challenges (cont.)

- Public Education
- NHDOT.com
  - Brochures
  - Simulations
  - NH Information
  - Pictures
  - Design Information
  - Links

NHITE Roundabouts
Marketing Challenges (cont.)

- Thru Traffic vs. Roundabout

- Regional Traffic
  - Meredith
  - Peterborough
  - Boscawen

NHITE Roundabouts
Crash Statistics

- Concord: Centre/Liberty
  - Pre Roundabout crash rate 5.7/yr
  - Post Roundabout Crash Rate 0.8/yr -86%

- Concord: North State/Franklin
  - Pre Roundabout crash rate 5.0/yr
  - Post Roundabout Crash Rate 1.0/yr -80%

- Goffstown: Center/Henry Bridge
  - Pre Roundabout crash rate 1.0/yr
  - Post Roundabout Crash Rate 2.9/yr
  - After reviewing crash reports 1.25/yr +190% + 25%
Questions ???

NHITE Roundabouts